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ABSTRACT

The comparatively small vowel inventory of Bantu languages leads young Bantu learners to produce "undifferentiations," so that, for example, the spoken forms of "hat," "hut," "heart" and "hurt" sound the same to a British ear. The two criteria for a non-native speaker's spoken performance are generally considered to be intelligibility and acceptability. Conformity to a standard such as British Received Pronunciation is not desirable in terms of the quality of the learner's sounds, but the quantity of phonemic distinctions the learner makes should approach the number made by a native speaker of English; otherwise intelligibility suffers and misspellings result. A simple psychological model of a typical spelling task is offered and some results of an analysis of spelling errors are cited in support. Three conclusions are offered: (1) the learner needs to be able to differentiate the sounds of English (especially the vowels) if he is to spell correctly; (2) many apparently morphological errors may be attributable to pronunciation problems; and (3) one criterion for the standard of pronunciation required in any region might be that the standard should facilitate accurate spelling. (Author/CFM)

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Spoken and Written Communication: are five vowels enough?

by Gerry Abbott

(This paper was presented to the IATEFL Conference, January 1977)

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Studies in the use of English as a medium of international communication have been largely concerned with the adequacy, for his communication purposes, of the non-native speaker's spoken performance. The criteria of "intelligibility" and "acceptability" have been put forward; Robinson (1971) for example, suggests that

> "there are two eminently practical criteria.... comprehensibility and acceptability. Does the subject's error or deviation from the implicit and explicit norms of speech of a community make him difficult to understand? And if not, is that error or deviation acceptable to that community?"

This paper deals with both spoken and written transmission at the levels of pronunciation and spelling. Some observations are offered

(i) on aims in pronunciation, with regard to "intelligibility";

(ii) on the relationship between the learner's pronunciation and spelling; and

(iii) on misspellings, with regard to "acceptability".

In the vast literature on English language teaching, surprisingly little has been written about spelling and most EFL textbooks pay no attention to spelling problems at all. So it is upon the second and third topics that I wish to concentrate. It will be necessary first, however, to consider not the transmission but the reception of signals, and to contrast briefly the two channels of reception - listening and reading - simply because the fundamental physical differences between communication in speech and communication in writing impose different constraints upon the receiver.

Speech embodies a series of messages transmitted in

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"real time"; the receiver's decoding devices therefore rely on his short-term memory (STM); and this STM circuit is overloaded if there is frequent need to re-scan long stretches of signal in attempts to reconstruct messages. The effort of dealing with messages perceived as ambiguous, incomplete or otherwise mutilated can therefore lead to

1. partial or complete loss of any information transmitted while the listener is rescanning; and
2. fatigue, which weakens the receiving device and may even cause the listener to "switch off".

On the other hand, the receiver is sensitive to a considerable range of mother-tongue dialectal pronunciation systems, most of which are easily intelligible and none of which may fairly be labelled "incorrect". In other words, he can understand a partially different pronunciation system, provided that the differences <u>are</u> systematically operated.

Written language, however, lends itself to leisurely scanning by the reader, who can not only re-scan but also "pre-scan". A moderately competent reader will usually have very little difficulty in reconstructing the correct form of misspelt or omitted words, provided of course that they are not too numerous and that (unlike some newspaper misprints) the misspellings bear <u>some</u> likeness to the correct forms. (Here, it is legitimate to talk about "correctness" because English spelling is a standard system). Whereas we may often find a non-native speaker's <u>speech</u> unintelligible simply because of his inadequate pronunciation, we seldom find his <u>writing</u> unintelligible simply because of spelling errors; yet these errors are, nonetheless, usually considered "unacceptable".

Bearing the above in mind, let us first consider our aims in pronunciation teaching and the criterion of intelligibility. We are by now familiar with at least three different answers to the question, "What sort of pronunciation should the teacher establish as a goal for the learner?" One is that complete accuracy should be aimed at, the goal being a "standard" such as R. P.; another is that such accuracy does not matter, and that a wide range of

mother-tongue sounds should be accepted as substitutes; and a third is that the quality of the learner's sounds does not matter as much as the consistent maintenance of a number of phonemic distinctions that approximate in quantity to those maintained by a native speaker. This last answer would form the basis of my own definition of an adequate pronunciation: that is, that the learner should be required to "differentiate", but that the sounds he uses need not be faithful copies of those of any standard dialect.

The difficulties that the learner encounters in trying to differentiate the sounds he makes when speaking English will, of course, depend very much on the phonological structure of his mother-tongue. The learner whose difficulties I want to describe is the East African Bantu child whose mother-tongue has only five or six vowels; but what I have to say will, I hope, apply to any learner whose mother-tongue has a much smaller inventory of vowels than English has. Perren (1965) has shown how the East African pupil develops a five- (or six-) vowel English by a process which he calls "false annexation", here referred to as "underdifferentiation". A partial representation of this process shows how seven of the native speaker's vowels are reduced to two:

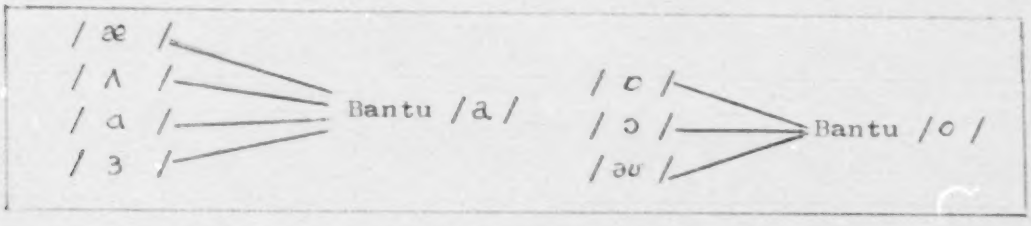

Figure 1: Two examples of a[illegible]l underdifferentiation.

The adverse effects of such underdifferentiation on intelligibility are, in my opinion, frequently underestimated; and I think that two inter-related fallacies are partly responsible for this attitude.

The first may be called the SINGLE ERROR (or CONTEXT) FALLACY. West (1960), for example, while rightly considering accurate rhythm to be "essential for intelligibility", also goes on to say that "whether a pupil gives the exact English value of /æ/, /ɔ/ or /ʌ/ does not matter so very much; the context prevents misunderstanding" (pp. 40, 41). In similar vein, George (1972) says:

> "In actual communication, in a context..... the protection offered by redundancy in the ordinary use of the language is so great that failure to make the distinction in pronunciation (between minimal pairs) would not easily result in misunderstanding". (p. 92)

And in the following paragraph he adds:

> "Any speaker of standard English has only to speak for five minutes or so taking care to make a consistent substitution of /d/ for /ð/, then ask listeners whether they experienced any difficulty in understanding..... The usual reaction is surprise, followed by miscellaneous suggestions". (p. 93)

The fallacy lies in assuming the presence of only one consistent underdifferentiation in a learner's speech; indeed, if there were only one, he would not need a teacher. Most learners produce a stream of speech in which underdifferentiations occur in varying density. Even one short utterance often contains several, with the result that the linguistic context is unreliable, offering very little "protection" for the message by way of redundancy.

The REDUNDANCY FALLACY may perhaps be traced (though not attributed) to remarks such as Gimson's (1962). After referring to the profusion of "cues" in the speech of a native speaker that constitute redundancy in the code, he continues:

> "Indeed, we may come to doubt the relative importance of vowels as a help to intelligibility, since we can replace our twenty English vowels by a single vowel /ə/ in any utterance and still, if the rhythmic pattern is kept, retain a high degree of intelligibility"*. (p.3.)

Gimson did not, of course, intend this remark to be applied to the teaching of English as a second language. In any case, no learner attempts to substitute /ə/ for all the English vowels: nor would any teacher encourage this. Nevertheless, George (ibid), speaking of the vowel inventory of English, says

> "We may expect a great amount of redundancy to lie in this area". (p. 85)

and concludes

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* It is noticeable that both West (op. cit.) and Gimson assume that an accurate rhythmic pattern is necessary for speech to be easily intelligible. Such accuracy undoubtedly constitutes strong "protection" for a message, but is not achieved by many East African learners.

> "that if the teacher has only a limited time to give to pronunciation, this time is better invested in consonant sounds than in vowel sounds". (p. 89)

True, he elsewhere refers (1963) to two experiments as supporting evidence, one by Gemelli and Black (1957) and one conducted by himself, which underlie his frequent remark that "50 per cent of the information which normally comes through the sounds produced by the speaker is redundant". Both of these experiments concerned the deliberate removal of short sections of tape (1/10 sec. in George's experiment) at regular intervals, in order to show how much of the remaining message was intelligible. But these excisions were, in George's (ibid) own words,

> "entirely at random with regard to phonetic content"

and it is difficult to see how the results could possibly be applied to the teaching of pronunciation. Yet, in an extraordinarily confused argument (1972, p. 85), we are asked to believe that the results somehow show that the learner can dispense with most of the English vowel-distinctions. He further believes that lack of understanding or misunderstanding occurs when the listener

> "is unintelligent, or too lazy or too prejudiced to scan the communication for additional possibilities at the occurrence of an unfamiliar spoken form" (p. 87) (my emphasis)

but (perhaps simply because I myself have frequently failed to understand non-native speakers) I prefer to believe that it is not only unintelligent, lazy or prejudiced people who misunderstand or fail to understand the spoken English of non-native speakers when underdifferentiated sounds "cluster".

My own experience of East African English is closer to that of Strevens (1954) in the Gold Coast. He noted the absence from Gold Coast English of a differentiation corresponding to the so-called "long" and "short" vowels of standard English, and remarked:

> "It is surprising how many hundreds of pairs of

> common words are distinguished by the pairs of sounds mentioned, and how frequently context fails to make the meaning clear and unambiguous".

We might also take heed of reports such as that of Lanham (1963), who found that recordings of Liberian English were almost totally unintelligible to black African teachers in South Africa. Tiffen (1974) quotes both this case and another involving Zambian students in London to whom, according to Richardson (1964),

> "the variety (of English) spoken by West Africans tends to be incomprehensible".

Tiffen goes so far as to conclude that

> "in spite of the uniformity of much of the English spoken within, say, southern Africa or West Africa, divergencies are arising which militate against the use of English as a vehicle of communication outside these areas".

Such reports need to be substantiated by further research. Meanwhile, any teacher or educational administrator concerned with the intelligibility of English for the purposes of international (or, indeed, national) communication might do well to beware of any policy or teaching-approach which (a) fails to take into account the fact that errors "cluster"; or (b) assumes extensive redundancy in the phonemic inventory of English.

Let us now return to our Bantu child who is making do with five vowels instead of twenty-odd, and specifically consider his underdifferentiation /ɑ/, as illustrated above. When presented with the four good models/kæt/, /kʌt/, /kɑt/ and /kɜt/, he will normally identify the four vowels with the nearest sound in his mother tongue. In each case this is /ɑ/; so he "hears" only one form, /kat/, which (unless he forgets it) he will store in his memory as one audial image. Assuming that he has learnt one meaning for each of the forms presented to him (and that he does not forget any of them), we can see that the child is having to deal with large-scale homophony: his one audial image has four meanings.

Now, this sort of situation is familiar to a native speaker, though the meanings attached to one audial image do not usually number more than three, and the chances of intelligibility being impaired by ambiguity are very slight. In fact, it took me some time to devise the following:

1. Where was it /saɪtɪd/? (sighted, sited, cited)
2. She hid among the /fɜz/. (firs, furs, furze)
3. She was alarmed by the /pɔz/. (paws, pause, pores)

A common triplet is /ðeə / (their, there, they're) but again intelligibility is almost never impaired, though temporary ambiguity might occur:

/ðeə bɪŋ səʧ dɪfɪkḷt kʌstəməz...../

For the native speaker, then, homophony almost never causes problems as far as intelligibility is concerned. Furthermore, homophonous words are so often spelled differently that they almost never cause reading problems. For the native speaker, it is only when he writes that such forms can cause difficulty. He may write their instead of there, dependant for dependent, accept for except and so on. But even if he does, the reader still has no difficulty in understanding what has been written. The problem is one of acceptability; how far is the teacher, the examiner or the employer prepared to accept misspellings?

Returning to our Bantu child again, we find that his problems are similar in kind but far greater in degree. He has to deal not only with true homophones but also with a vast number of added ones. Let us now assume that he is presented with four good written models, cat, cut, cart and curt* which (again assuming that he doesn't forget them) he stores in his memory as "visual images"; and that our learner subsequently attempts to write "I cut my finger". Figure 2 indicates his predicament.

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* The problems of early reading are outside the scope of this paper; but we might, in passing, consider how daunting the task of learning to read English must appear to the Bantu child; especially, perhaps, the child already familiar with his own highly regular orthography. If we fail to help him to differentiate (aurally, at least), are we not therefore failing to help him with his reading?

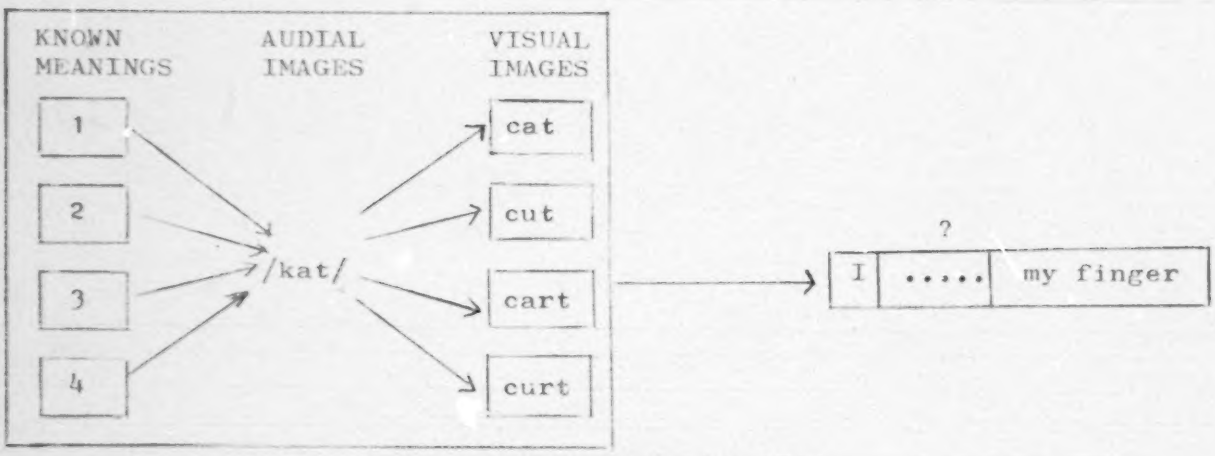

Figure 2: Model of a spelling task.

The learner who, like the native English speaking child, possesses a differentiated audial image for each of the four written (visual) images above can rely on the support of the appropriate aud al image when spelling every word, whereas our Bantu child cannot. With his underdifferentiation /kat/, and without the help of other strategies, he will tend to select items from his "visual image bank" at random, sometimes writing *cut for cat, and sometimes *cat for cut and so on, even in the same piece of written work. However, I am not suggesting that this is all that is involved in the learner's spelling of a word. He may have access to morphosyntactic rules which enable him to reject one or more forms; and he may use mnemonic devices which enable him to select the right form. Such strategies are probably universally employed.

On the other hand, the above model is an oversimplification, since the learner's task is not always simply to choose one appropriate spelling from other good spellings of unintended words. When his memory bank fails to yield a complete visual image of the word he wants to write, he tends to transcribe serially each component of his audial image; but in doing so, he is forced to select from all the representations of /æ/, /ʌ/, /ɑ/ and /ʒ/ that he is familiar with. His representation of (say) shirk (or /ʃɑ k/,

to take his audial image) will have to be chosen from the following: *shack, *shuck, *shark, *sherk, *shurk, *sheark, shirk and maybe others.

It was said earlier thatunless such misspellings are frequent (and they sometimes are), they do not often pose comprehension problems for the reader.
But they are, after all, errors; consequently, they meet with a variety of responses ranging from tolerance to intolerance, or from amusement to hilarity. For example, one error encountered in Uganda, *flash toilets, would probably strike an examiner as painful in more senses than one! Furthermore, experience suggests that misspellings such as *shack and *shark interfere with comprehension more than "non-words" such as *sheark. When the unintended word is syntactically feasible (e.g. cup for cap), and especially when it is in context also semantically feasible (e.g. truck for track), written communication is impaired.

What has been said so far constitutes a simplified theoretical model, based on observation but not supported by evidence. The evidence which follows is drawn from research recently completed at Manchester University by Elizabeth Abbott (1976). This is an analysis of spelling mistakes made by educated Ugandan adults, rather than young learners; but the results are nonetheless of interest in the present discussion.

1,706 misspellings were classified according to phoneme misrepresented. "Misrepresentation" included, of course, substitutions, omissions, insertions and transpositions. Very clear patterns of error emerged. These patterns were then, and only then, viewed in the light of a contrastive phonological analysis of a typical Ugandan language (Luganda) and English. Of the whole corpus

(1) Roughly three-quarters of the errors (72%) clearly suggested that the mother-tongue phonological system was interfering. This tends to confirm that indeterminate spelling is largely caused by indeterminate pronunciation.

(2) About one third (30.6%) were those misrepresentations of vowels that were attributable to mother-tongue phonological interference. This supports the view that adequate differentiation of vowels is an important prerequisite for good spelling. These vowel errors rank above all other error-groups, the second largest group resulting from consonant-cluster difficulties (20.8%)

(3) 42% constituted perfectly-spelled but unintended words. This lends support to the model suggested above, and <u>may</u> also indicate that there is nothing very much wrong with the Bantu learner's <u>visual</u> memory.

(4) Finally, the very nature of the indeterminacy of pronunciation (or underdifferentiation) that I have described is echoed in the results of the analysis by what the researcher calls "pairing". This is what happens:

/æ/	for	/ʌ/
*stamped		stumped
*back		buck
*tag		tug
*flash		flush
*shaffles		shuffles
	etc.	
TOTAL 60		

/ʌ/	for	/æ/
*truck		track
*drugs		drags
*stump		stamp
*flushes		flashes
*scrumble		scramble
	etc.	
TOTAL 65		

<u>Figure 3: "Pairing" in errors attributable to underdifferentiation</u>

Not only do the mistakes occur "in reverse", as it were; but the "reverse" mistakes actually tend to balance the others numerically. This "pairing" phenomenon occurs throughout the results.

Finally, what conclusions may be drawn from this discussion? I should like to suggest three.
The first concerns "acceptability" in writing. Traditionally, examining boards, other authorities (e.g. inspectors, head-masters, etc.) and even the general public, have been intolerant of misspellings. In this country there is a constant outcry: G.C.E. examiners fulminate annually and there are

frequent letters in the Press. The errors quoted are frequently "homophonous" misspellings and can have caused no misunderstanding at all. Yet there is a feeling that such "basic" mistakes should not occur at all; and that there is, therefore, something "basically" wrong with the education of the speller - either that, or the fellow is lazy or careless. Such attitudes are not uncommon in Britain. In countries where English is a lingua franca, those concerned with the English syllabus and examinations have a choice to make. If they decide to be satisfied with a standard of pronunciation which allows a great deal of underdifferentiation, they should be prepared to accept a great deal of variety in spellings. Or conversely, if they are not prepared to ignore frequent misspellings, they should recognise that the learner does need to be able to differentiate the sounds of English - especially, perhaps, the vowels - if he is to spell correctly.

The second conclusion concerns the interpretation of errors. Teachers, examiners and anyone else concerned with errors should bear in mind that apparent morphological errors may in fact be the result of pronunciation problems. In Africa, *drunk for drank (or vice versa) is just as attributable to this cause as it is to faulty grammatical control; and among learners who find final consonant clusters difficult to pronounce, the same may be said of nominal markers of plurality and possession, and verbal markers of "person" and tense. One might even suggest that no error analysis can be regarded as reliable until it has dealt with possible phonological, and perhaps orthographical, causes.

The third and last conclusion that I wish to draw takes us back to where we started, since it concerns the teaching of pronunciation, and is as follows. Those attempting to establish realistic standards of pronunciation for any region might consider the problem of spelling. One of their specifications might be as follows:

> An "adequate" pronunciation is one which facilitates accurate spelling.

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